

Continuity, LICs and Competency-based Education

Molly Cooke MD MACP
IAMSE
February 1, 2018

Three contemporary training models

Clinical participation of medical students

Programme A: Context - metropolitan tertiary hospital. Model - block rotation									
Medicine	Surgery	OB/G	Pediatrics	Family GP	Psychiatry	Medicine	Surgery	OB/G	Pediatrics
						Urban GP 1 session per week			
Programme B: Context - urban community-based. Model - hybrid (block and longitudinal)									
Medicine	Surgery	OB/G	Pediatrics	Psychiatry	Specialist ambulatory care clinics				
					Emergency medicine				
					General practice / Rural sites				
Programme C: Context - rural towns with local hospital. Model - longitudinal integrated clinical (LIC) placement									
					Medicine				
					Surgery				
					OB/G				
					Pediatrics				
					Psychiatry				
					General practice				

Figure 1 Three contemporary clinical education programmes. GP = general practice; O and G = obstetrics and gynaecology

Shahi Med Educ 2015; 49: 1219-1228

Today's presentation

- What actually happens in a Longitudinal Integrated Clerkships (LICs)
- Outcomes of Longitudinal Integrated Clerkships (LICs)
- How Longitudinal Integrated Clerkships (LICs) support competency-based medical education

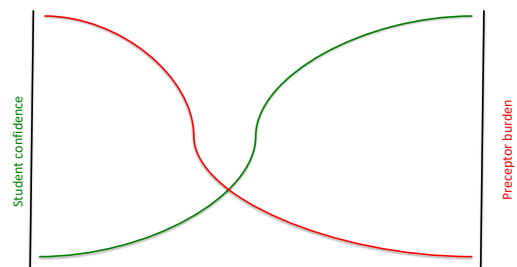
Today's presentation

- What actually happens in a Longitudinal Integrated Clerkships (LIC)
- Outcomes of Longitudinal Integrated Clerkships (LICs)
- How Longitudinal Integrated Clerkships (LICs) support competency-based medical education

Integrated Clinical Immersion – Sample Four Weeks

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
W 1		FAMILY MEDICINE	INTERNAL MEDICINE	SURGERY CLINIC	PEDIATRICS	SURGERY CLINIC	STUDY DAY
W 2		Follow up with the community (GP)	PRECEPTOR SCHOOL	2-10 year with the clinical preceptor	NEUROLOGY		
W 3		FAMILY MEDICINE	2-10 year with the community preceptor	OB/GYN	2-10 year with the community preceptor	OB/GYN	
W 4	2-10 year with the community preceptor	OB/GYN	PRECEPTOR SCHOOL	2-10 year with the community preceptor	Follow up with the community preceptor	PRECEPTOR SCHOOL	
W 5			OB/GYN	OB/GYN			
W 6	STUDY DAY	2-10 year with the community preceptor	INTERNAL MEDICINE	PRECEPTOR SCHOOL	PEDIATRICS	OB/GYN	
W 7		Preceptor case presentation to the school	PRECEPTOR SCHOOL	PRECEPTOR SCHOOL	PEDIATRICS		
W 8		ADULT MEDICINE CLINIC					
W 9		FAMILY MEDICINE	INTERNAL MEDICINE	SURGERY CLINIC	2-10 year with the community preceptor	SURGERY CLINIC	
W 10		Preceptor case presentation to the school	PRECEPTOR SCHOOL	PRECEPTOR SCHOOL	OB/GYN	2-10 year with the community preceptor	
W 11							

Longitudinal trajectory of a 12-month LIC



Learning map for the year – a patient with diabetes

- First few encounters
 - Gathering and documenting clinical information
- Early focus
 - Increasing emphasis on diagnostic skills
- Mid-year focus
 - Increasing emphasis on management skills
- End of the year
 - Highlight system of case and quality issues



Leavitt and Cooke The Clinical Teacher 2011; 8:93-96.

Continuity in LICs

1. With curriculum
2. With peers
3. With site and staff
4. With preceptor
5. With patients

Hudson et al. Medical Teacher 2017; 39:7-13

Today's presentation

- What actually happens in a Longitudinal Integrated Clerkships (LIC)
- **Outcomes of Longitudinal Integrated Clerkships (LICs)**
- How Longitudinal Integrated Clerkships (LICs) support competency-based medical education

LICs improve:



LICs improve:



LICs improve:



The Harvard Medical School
Cambridge Integrated Clerkship
Satisfaction

How Satisfied Have You Been With? (1- not at all, 6 - extremely)			
	CIC (n=27)	CON (n=40)	P
The Amount of Mentoring You Have Received from Attendings	5.26	3.15	<0.001
The Atmosphere for Learning You Have Encountered	5.59	4.03	<0.001
The Quality of Feedback You Have Received	4.37	3.33	0.002
The Quality of Your Clerkship Overall	5.38	4.60	<0.001

Hirsh and Ogur 2007

The Harvard Medical School
Cambridge Integrated Clerkship
Content Knowledge: Shelf Exam Scores

	CIC 1-3 (n=27)	CON 1-3 (n=40)	P
Ob/Gyn	73.70	71.75	0.375
Pediatrics	80.60	74.79	0.008
Surgery	76.85	73.32	0.098
Psychiatry	80.22	71.05	0.001

Hirsh and Ogur 2007

LICs improve the patient experience - 1

"She [the student] has basically been managing me since I first got out of hospital...she was *another doctor* but she's been with me through my whole case with my treating GP...and every time he (GP) would come and consult and it saves a lot of time it's a better quality of *service*, *cos I was getting two doctors for the price of one.*"

—UoW rural LIC patient [22]

Poncelet and Hudson. Healthcare 2015; 3: 607-618

LICs improve the patient experience - 2

- *"Dealing with the ordeal of having cancer and going through treatment at a hospital like UCSF, which is very busy, can be kind of overwhelming at times. I kind of looked to him as a friendly face, sort of a liaison between the doctor and the patient."*
- —UCSF LIC patient 504 [15]

Poncelet and Hudson. Healthcare 2015; 3: 607-618

LICs improve the patient experience - 3

- *"I find medical students are just...they're willing to learn...they're just a lot more aware of the patient I think sometime. I met her at the beginning of my pregnancy. I went through a few things...you'd come to visit again and she'd be there. It was kind of like she was growing with me...if that makes sense."*

—UoW rural LIC patient [22]

Poncelet and Hudson. Healthcare 2015; 3: 607-618

LICs promote strong student-preceptor relationships

Table 6. Preceptor perceptions of medical students skills, abilities, and interests, Denver Health LIC, 2014 (N=28).

	Percent (N)		Mean (SD) (scale 1-4)		p Value
	Baseline	End of LIC	Baseline	End of LIC	
In general, how well do you know the medical students you teach?					
Limited knowledge	3.6 (1)	0.0 (0)	2.82 (0.85)	3.39 (0.66)	.004
General knowledge	35.7 (10)	10.7 (3)			
Enough to Tailor	35.7 (10)	39.3 (11)			
Enough to Tailor and Mentor	25.0 (7)	50.0 (14)			

LIC, longitudinal integrated clerkships; N, number; SD, standard deviation.

Item item: In general how well do you know the medical student/LIC students you teach/taught? Four-point scale: 1=I have a limited knowledge of a student's skills, 2=I have a general knowledge of a student's skills, 3=I know them well enough to tailor instruction, and 4=I know them well enough to tailor instruction and provide mentorship.

Snow et al Faculty experience and engagement in a LIC Medical Teacher 2017; 39: 527-534

Today's presentation

- What actually happens in a Longitudinal Integrated Clerkships (LICs)
- Outcomes of Longitudinal Integrated Clerkships (LICs)
- **How Longitudinal Integrated Clerkships (LICs) support competency-based medical education**

LIC preceptors use more advanced teaching approaches

Table 5. Frequency and mean rating of teaching techniques utilized, Denver Health LIC, 2014* (N = 28).

	Percent (%)		Mean (SD) (scale 1-5)		p Value
	Baseline % Using technique at least 75% of the time	End of LIC % Using technique at least 75% of the time	Baseline	End of LIC	
Techniques used less frequently in the LIC compared to prior teaching roles					
Assign readings or topics for investigation	67.9 (19)	25.0 (7)	3.93 (0.94)	2.64 (1.28)	<.001
Review basic science related to clinical decisions	67.9 (19)	28.6 (8)	3.86 (0.80)	2.96 (1.14)	<.001
Have students observe you with patients	75.0 (21)	35.7 (10)	4.00 (0.80)	3.18 (1.12)	.005
Observe students with patients	60.7 (17)	25.0 (7)	3.68 (1.06)	3.00 (1.02)	.004
Techniques used more frequently in the LIC compared to prior teaching roles					
Ask questions to promote thinking	35.7 (10)	50.0 (14)	3.11 (1.03)	3.61 (0.88)	.02
Provide feedback to students	14.3 (4)	53.6 (15)	2.46 (0.84)	3.64 (0.87)	<.001
Provide students practice in clinical reasoning	21.4 (6)	60.7 (17)	2.68 (1.19)	3.89 (0.92)	<.001
Techniques with no change					
Teach procedural skills	14.3 (4)	21.4 (6)	2.61 (1.03)	2.50 (1.11)	.59

LIC, longitudinal integrated clerkship; ft, number; SD, standard deviation

*Item stem: Indicate the frequency with which you currently use each of the following commonly used activities when you teach medical students. Five-point scale: 1 = Never use, 2 = Use 25% of time, 3 = Use 50% of time, 4 = Use 75% of time, and 5 = Always use.

Snow et al Faculty experience and engagement in a LIC Medical Teacher 2017; 39: 527-534

LICs support competency-based education

Van Melle's Core Components of CBME

1. Competencies required for practice are clearly articulated.
2. Competencies are arranged progressively.
3. Learning experiences facilitate the progressive development of competencies.
4. Teaching practices promote the progressive development of competencies.
5. Assessment practices support and document the progressive development of competencies.



E van Melle in press

Curiosity-driven learning

1. Clinical medicine, including the presentation, differential diagnosis and management of the conditions seen in practice
2. The basic science foundations of clinical findings, disease pathogenesis, evidence-based medicine and treatments
3. Emotional and psychosocial issues (ours and the patients')
4. The clinical microsystem, community resources and barriers and the larger US health system

Leavitt and Cooke The Clinical Teacher 2011; 8:93-96.

General Patient Care in an Integrated Model



- AB: 63 year old established patient in my practice w/ remote HD, ADPKD, renal failure on PD
Events over year: incarcerated hernia in exp lap incision, new Dx NSC lung cancer
Learning points: molecular basis of cyst formation, giving bad news, interpretation of isolated prolonged aPTT, cross-specialty collaboration

- MM: 40 year old with spina bifida, chronic pain, depression, and poly-substance abuse referred from neurology in September for primary care
Events over year: Doctor-shopping, suicide attempt, residential rehab
Learning points: Embryology of neural tube defects, folate and methylation hypothesis, principles of pain management, pharmacology of buprenorphine, setting limits and managing boundaries

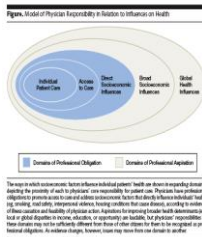
General Patient Care in an Integrated Model



- AB: 63 year old established patient in my practice w/ remote HD, ADPKD, renal failure on PD
Events over year: incarcerated hernia in exp lap incision, new Dx NSC lung cancer
Learning points: **molecular basis of cyst formation**, giving bad news, interpretation of isolated prolonged aPTT, cross-specialty collaboration

- MM: 40 year old with spina bifida, chronic pain, depression, and poly-substance abuse referred from neurology in September for primary care
Events over year: Doctor-shopping, suicide attempt, residential rehab
Learning points: **Embryology of neural tube defects, folate and methylation hypothesis**, principles of pain management, pharmacology of buprenorphine, setting limits and managing boundaries

Integration of the roles of a physician



Gruen 2004 JAMA

- Physician-citizen, scientist, leader-manager, policy maker-advocate
- Areas of concentration
- Residency – Pathways

Today's presentation

- What actually happens in a Longitudinal Integrated Clerkships (LICs)
- Outcomes of Longitudinal Integrated Clerkships (LICs)
- How Longitudinal Integrated Clerkships (LICs) support competency-based medical education



Questions and comments